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APPARATUS AND METHOD FOR PROVIDING A CENTRALIZED PERSONAL  
DATA BASE ACCESSED BY COMBINED MULTIPLE IDENTIFICATION  
NUMBERS

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## FIELD OF THE INVENTION

The present invention relates to a centralized personal data bank and a system for  
accessing the centralized personal data bank by a user and also for accessing the centralized  
personal data bank by any person to whom the user gives a primary number and a  
10 secondary number.

## BACKGROUND OF THE INVENTION

Personal information such as name, address, telephone number, credit, or account  
information is needed for most transactions. With the increase in transactions conducted  
over the Internet, the repetitive requirement for providing personal information increases  
15 rapidly. For example, every company that sends a bill or a monthly statement (e.g.  
telephone company, utility company, bank, etc.) to a person, requires notification of a  
change in that person's address, phone number or other information. A need exists for an  
automated process that eliminates the repetitive tasks of providing basic information,  
updating account records, providing change of address information, and contacting each  
20 separate business.

## SUMMARY OF THE INVENTION

The invention that meets the needs identified above is a centralized personal data base accessible through the Internet and secured by a combination of identification numbers, including a basic, a primary and a secondary number. The secure personal data base is accessible to the user by the combination of the basic and a primary number. The secure personal data base is accessible to others who have been supplied with a primary and a secondary number.

## BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as a preferred mode of use, further objectives and advantages thereof, will best be understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

Figure 1 is depiction of a distributed data processing system;

Figure 2 is a depiction of a server computer;

Figure 3 is a depiction of a client computer;

Figure 4 is a depiction of the centralized personal data base memory;

Figure 5 is flowchart of the overall centralized personal data base process;

Figure 6 is a flowchart of the registration process;

Figure 7 is a flow chart of the account set up process;

Figure 8 is a flow chart of the merchant notification process;

Figure 9 is a flowchart of the update process; and

Figure 10 is a flow chart of the merchant access process.

5 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 depicts a pictorial representation of distributed data processing system **100** in which the present invention may be implemented and is intended as an example, and not as an architectural limitation, for the processes of the present invention. Distributed data processing system **100** is a network of computers containing network **102**, which is the  
10 medium used to provide communications links between various devices and computers connected together within distributed data processing system **100**. Network **102** may include permanent connections, such as wire or fiber optic cables, or temporary connections made through telephone connections. In the depicted example, server **104** is connected to network **102** along with storage unit **106**. In addition, clients **108**, **110**, and **112** also are  
15 connected to a network **102**. Clients **108**, **110**, and **112** may be, for example, personal computers or network computers.

For purposes of this application, a network computer is any computer, coupled to a network, which receives a program or other application from another computer coupled to the network. In the depicted example, server **104** provides Web based applications to  
20 clients **108**, **110** and **112**. Clients **108**, **110**, and **112** are clients to server **104**. Distributed

data processing system **100** may include additional servers, clients, and other devices not shown. In the depicted example, distributed data processing system **100** is the Internet with network **102** representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. Distributed data  
5 processing system **100** may also be implemented as a number of different types of networks, such as for example, an intranet, a local area network (LAN), or a wide area network (WAN).

Referring to Figure 2, a block diagram depicts a data processing system, which may be implemented as a server, such as server **104** in Figure 1. Data processing system **200**  
10 may be a symmetric multiprocessor (SMP) system including a plurality of processors such as first processor **202** and second processor **204** connected to system bus **206**. Alternatively, a single processor system may be employed. Also connected to system bus **206** is memory controller/cache **208**, which provides an interface to local memory **209**. I/O bus bridge **210** is connected to system bus **206** and provides an interface to I/O bus **212**.  
15 Memory controller/cache **208** and I/O bus bridge **210** may be integrated as depicted. Peripheral component interconnect (PCI) bus bridge **214** connected to I/O bus **212** provides an interface to first PCI local bus **216**. Modem **218** may be connected to first PCI bus local **216**. Typical PCI bus implementations will support four PCI expansion slots or add-in connectors. Communications links to network computers **108**, **110** and **112** in Figure 1 may  
20 be provided through modem **218** and network adapter **220** connected to first PCI local bus

216 through add-in boards. Additional PCI bus bridges such as second PCI bus bridge 222 and third PCI bus bridge 224 provide interfaces for additional PCI local buses such as second PCI local bus 226 and third PCI local bus 228, from which additional modems or network adapters may be supported. In this manner, server 200 allows connections to multiple network computers. A memory-mapped graphics adapter 230 and hard disk 232 may also be connected to I/O bus 212 as depicted, either directly or indirectly. Those of ordinary skill in the art will appreciate that the hardware depicted in Figure 2 may vary. For example, other peripheral devices, such as an optical disk drive and the like also may be used in addition or in place of the hardware depicted. The depicted example is not meant to imply architectural limitations with respect to the present invention. The data processing system depicted in Figure 2 may be, for example, an IBM RISC/System 6000 system, a product of International Business Machines Corporation in Armonk, New York, running the Advanced Interactive Executive (AIX) operating system.

With reference now to Figure 3, a block diagram illustrates data processing system 300 in which the invention may be implemented. Data processing system 300 is an example of either a stand-alone computer, if not connected to distributed data processing system 100, or a client computer, if connected to distributed data processing system 100. Data processing system 300 employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures such as Micro Channel and ISA may be used. Processor 302 and main memory 304 are

connected to PCI local bus **306** through PCI bridge **303**. PCI bridge **303** also may include an integrated memory controller and cache memory for Processor **302**. Additional connections to PCI local bus **306** may be made through direct component interconnection or through add-in boards. In the depicted example, local area network (LAN) adapter **310**,  
5 SCSI host bus adapter **312**, and expansion bus interface **314** are connected to PCI local bus **306** by direct component connection. In contrast, audio adapter **316**, graphics adapter **318**, and audio/video adapter (A/V) **319** are connected to PCI local bus **306** by add-in boards inserted into expansion slots. Expansion bus interface **314** provides a connection for a keyboard and mouse adapter **320**, modem **322**, and additional memory **324**. SCSI host bus  
10 adapter **312** provides a connection for hard disk drive **326**, tape drive **328**, and CD-ROM **330** in the depicted example. Typical PCI local bus implementations will support three or four PCI expansion slots or add-in connectors. An operating system runs on processor **302** and is used to coordinate and provide control of various components within data processing system **300** in Figure 3. The operating system may be a commercially available operating  
15 system such as OS/2, which is available from International Business Machines Corporation. "OS/2" is a trademark of International Business Machines Corporation. An object oriented programming system, such as Java, may run in conjunction with the operating system and provides calls to the operating system from Java programs or applications executing on data processing system **300**. "Java" is a trademark of Sun Microsystems, Incorporated.  
20 Instructions for the operating system, the object-oriented operating system, and applications

or programs may be located on storage devices, such as hard disk drive 326, and they may be loaded into main memory 304 for execution by processor 302. Those of ordinary skill in the art will appreciate that the hardware in Figure 3 may vary depending on the implementation. Other internal hardware or peripheral devices, such as flash ROM (or  
5 equivalent nonvolatile memory) or optical disk drives and the like, may be used in addition to or in place of the hardware depicted in Figure 3. Also, the processes of the present invention may be applied to a multiprocessor data processing system. For example, data processing system 300, if optionally configured as a network computer, may not include SCSI host bus adapter 312, hard disk drive 326, tape drive 328, and CD-ROM 330, as noted  
10 by the box with the dotted line in Figure 3 denoting optional inclusion. In that case, the computer, to be properly called a client computer, must include some type of network communication interface, such as LAN adapter 310, modem 322, or the like. As another example, data processing system 300 may be a stand-alone system configured to be bootable without relying on some type of network communication interface, whether or not  
15 data processing system 300 comprises some type of network communication interface. As a further example, data processing system 300 may be a Personal Digital Assistant (PDA) device which is configured with ROM and/or flash ROM in order to provide non-volatile memory for storing operating system files and/or user-generated data. The depicted example in Figure 3 and above-described examples are not meant to imply architectural  
20 limitations with respect to the present invention. It is important to note that while the

present invention has been described in the context of a fully functioning data processing system, those of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in a form of a computer readable medium of instructions and a variety of forms and that the present invention applies equally regardless  
 5 of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media include recordable-type media, such as a floppy disc, a hard disk drive, a RAM, and a CD-ROM, and transmission-type media such as digital and analog communications links.

Fig 4. depicts centralized personal data base **400**. As used herein, the term  
 10 centralized personal data base (CPDB) means (1) a data base that may be accessed by a user having a basic and a primary number and also by any person to whom the user provides a primary and a secondary number, (2) a data base that can be accessed through the Internet from a centralized personal data base web site, and (3) that may be located in one storage area connected to one or more server computers that may be distributed in multiple storage  
 15 areas each of which are connected to one or more server computers. CPDB **400** contains set-up program **410**, access program **420**, basic, primary and secondary number generation program **430**, registration program **440**, search program **450**, merchant data base **460** and user data base **470**. Alternatively, set-up program **410**, access program **420**, primary and secondary number generation program **440**, registration program **450** and search program  
 20 **460** may be located in the memory of a server computer or distributed among a plurality of



computers and linked to each other and the CPDB by a network. Furthermore, one or more of the above referenced programs may be built into a web browser program or furnished as a plug-in to a web browser program.

Fig. 5 depicts a flow chart of CPDB process **500** showing the three main steps in the overall CPDB process **500**. The first step is registration (**600**). The second step is notification (**600**). The third step is access (**700**).

Fig. 6 depicts the steps in registration **600**. Registration **600** begins (**602**) when registration program **420** of CPDB **400** is invoked by a consumer accessing the CPDB website and indicating a desire to register. The consumer inputs data such as name, social security number, date of birth, phone number, fax number, e-mail address, and any other information that may be required by a merchant, service provider or government agency (**620**). The consumer receives a basic number (**630**). The consumer also receives a primary number (**640**). As used herein the term number means a unique code number comprising a plurality of individual numerals assigned to an authorized user and shall have the same meaning as a personal identification number (PIN). The basic number and the primary number are used by the CPDB customer to access and change the CPDB record and to create or delete primary and secondary numbers. The registration process ends (**650**).

The relationship of the three types of numbers used for access is shown in Table A.

Type	User	Merchant
Basic	Yes	No
Primary	Yes	Yes
Secondary	No	Yes

Table A

The user is the only person with the basic number and therefore, although the primary number is given out to others, the user is the only one who can access his account to input or change information. The secondary number is used by the person to whom the user desires to give access. A variety of secondary numbers can be created for different purposes.

Fig. 7 depicts the process for secondary number creation. The consumer goes to the CPDB website (710) and logs on (720) by inputting the basic number and the primary number. The user selects secondary number creation from the menu (730). One or more secondary numbers can be created for each CPDB primary number. The user selects the information that is to be accessible to a merchant (740). In other words, the user decides what information can be accessed by a merchant using the primary number in combination with each particular secondary number the user will provide. A determination is made whether the user wants to attach an expiration date to the secondary number (742). If the user wants to attach an expiration date to the secondary number, the user will enter the expiration date or select from a range of time periods offered by the CPDB website (744).

If the user enters an expiration date or selects a time period, the secondary number will not be effective after the date arrives or the time period expires. If the consumer does not want to place an expiration date on the secondary number, then the process goes to step **750**. The consumer receives a secondary number (**750**). A determination is made as to whether  
5 another secondary number is desired (**760**). If another secondary number is desired, then the process returns to step **740**. If another secondary number is not desired, the process ends (**770**).

Fig. 8 depicts a flow chart of merchant notification process **800**. A determination is made as to whether the merchant is in the merchant data base of the CPDB (**810**). If the  
10 merchant is not in the CPDB merchant data base, then the user inputs the information (**820**) and the process goes to step **830**. If the merchant is in the CPDB merchant data base, then the process goes to step **830**. The user selects the merchants to notify (**830**). For example, the user may select merchants, such as the telephone company, utility company, credit card company or bank. Notification may be accomplished by using the primary number and  
15 secondary number through the CPDB web site facility (**840**) or by contacting the companies directly one at a time. In each of these transactions, the user may already have an account with the merchant or may desire to have one.

Fig. 9 depicts flow chart of the update procedure. The user accesses the website (**910**). A determination is made as to whether the user requires a new account or has an  
20 existing account (**920**). If the CPDB user already has an account, then the primary and

secondary number combination will be used for updating and posting changes into user's CPDB record. If the user desires to have a new account, the user need only transmit two data fields, i.e. the primary number and a secondary number, to create a new account with the merchant (930). Once the account is created, all required data fields can be extracted  
5 from the CPDB by the merchant using the primary number and the secondary.

Fig. 10 depicts the merchant access process. Once the merchant has the primary number and the secondary number, the merchant may access the CPDB. Each merchant in the CPDB merchant directory queries the centralized personal data base with the primary number and secondary number to obtain information about the user. For example, a  
10 merchant may require such information at the time of the monthly billing statements to customers. Also, on a pre-determined date of every month (depending upon the number of records to be updated), the merchant can update his data base with the CPDB in a process called synchronization. A used herein, sychronization means either an automatic or merchant initiated transfer of the latest data to the merchant from the CPDB at a pre-  
15 arranged time and pre-arranged schedule. For example, the merchant may synchronize his data base at the time of sending promotional offers, at the time of sending important account information or policy changes, and while signing up new members. Alternatively, the merchant may specify a time and day to automatically update information. The process begins (902) and the merchant accesses the web site (910). The merchant enters the primary  
20 number and the secondary number. A determination is made as to whether both numbers

are correct (930). If both numbers are not correct the process returns to step 920. If both numbers are correct, a determination is made whether the merchant wants to search and acquire data (940). If the merchant wants to search and acquire data, then the search is conducted, the information acquired and the information transmitted to the merchant account (950). If the merchant does not want to search and acquire data, then the process determines whether the merchant wants to synchronize data. If the merchant wants to synchronize data, then a determination is made whether the merchant wants to initiate an update at the present time or to schedule an automatic update. If the merchant wants to initiate an update at the present time, the merchant information is updated (970). If the merchant wants to schedule an automatic update, the date and time for the update is entered. If the merchant does not want to synchronize data, then a determination is made as to whether another transaction is desired (980). If another transaction is desired, the process returns to step 920. If another transaction is not desired, then the process ends (990).

The advantages provided by the present invention should be apparent in light of the detailed description provided above. The description of the present invention has been presented for purposes of illustration and description, but is not limited to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. The embodiment was chosen and described in order to best explain the principles of the invention, the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with

various modifications as are suited to the particular use contemplated.

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